

7. Substance Abuse, Posttraumatic Stress Disorder and Disasters

October 1, 2001—January 22, 2004

2002

Najavits, Lisa. M. Seeking Safety: A Treatment Manual for PTSD and Substance Abuse. New York: Guilford Press, 2002, 401 pp., ISBN 1-57230-639-4.

This manual presents the first empirically studied, integrative treatment approach developed specifically for PTSD and substance abuse. For persons with this prevalent and difficult-to-treat dual diagnosis, the most urgent clinical need is to establish safety--to work toward discontinuing substance use, letting go of dangerous relationships, and gaining control over such extreme symptoms as dissociation and self-harm. The manual is divided into 25 specific units or topics, addressing a range of different cognitive, behavioral, and interpersonal domains. Each topic provides highly practical tools and techniques to engage patients in treatment; teach "safe coping skills" that apply to both disorders; and restore ideals that have been lost, including respect, care, protection, and healing. Structured yet flexible, topics can be conducted in any order and in a range of different formats and settings. The volume is designed for maximum ease of use with a large format and helpful reproducible handouts and forms.

Marshall, R. D. and S. Galea (2004). "Science for the Community: Assessing Mental Health After 9/11." J Clin Psychiatry **65**(Supplement 1): 37-43.

Reactions to the September 11 attacks across the United States were pervasive, and persons throughout the country reported experiences akin to posttraumatic stress disorder (PTSD) in the first week following the attacks. In the New York area, 2 major surveys conducted 4 to 8 weeks after the attacks found that approximately 1 in 10 persons probably met full criteria for PTSD related to September 11. Although tobacco, alcohol, and marijuana use did increase, it was largely among persons already using these substances. The greatest increase, not surprisingly, occurred among persons with PTSD and major depressive disorder. Nationwide during the same time period, rates of PTSD related to September 11 were estimated at 2.7% to 4.3%, a striking finding in that the attacks were witnessed primarily on television outside the New York area. In all studies, having anxiety symptoms or meeting criteria for PTSD was strongly associated with number of hours of television watched on September 11 and in the days afterward. A number of explanations for this new finding are possible. These data can inform our understanding of trauma-related diagnoses, further the evolving diagnostic definitions of the Diagnostic and Statistical Manual of Mental Disorders, and contribute to etiologic models of PTSD. Future directions for postdisaster survey research are briefly discussed.

2003

Boscarino, J. A., S. Galea, et al. (2003). "Psychiatric medication use among Manhattan residents following the World Trade Center disaster." J Trauma Stress **16**(3): 301-6.

To assess medication use in New York after the September 11th attacks, a telephone survey was conducted in October 2001 (N = 1,008). The prevalence of psychiatric medication use 30 days before the disaster was 8.9% compared to 11.6% 30 days after, a small but significant increase. The most important factor predicting postdisaster use was predisaster

use 92% of those who used medications postdisaster used them predisaster. In addition, 3.3% used psychiatric medications 30 days postdisaster, but not 30 days before. Those who had panic attacks, posttraumatic stress disorder (PTSD), and insurance coverage, were the most likely medicated (26.5%). However, among those who used postdisaster medications (n = 129), new users tended to be those with panic attacks (44.1%) and those with panic attacks and PTSD (69.2%).

Cardenas, J., K. Williams, et al. (2003). "PTSD, major depressive symptoms, and substance abuse following September 11, 2001, in a Midwestern university population." Int J Emerg Ment Health 5(1): 15-28.

This research investigated the prevalence of Posttraumatic Stress Disorder (PTSD), Major Depressive Disorder (MDD) and substance abuse in a Midwestern university population following the terrorist attacks on September 11, 2001, in New York City and Washington, DC. Three-hundred five subjects volunteered to complete a questionnaire which measured nine areas of psychosocial functioning which included demographics, personality, PTSD, MDD, prior traumatic experiences, alcohol and drug use, psychiatric history and treatment, and current attitudes towards government, religion, the economy, and how children were affected by the events. The participants lived in a large urban city over which United Flight 93 circled before crashing in Pennsylvania due to terrorist attacks. The subjects were forced to evacuate their university and city due to attacks on New York and errant United Flight 93. The study also replicated the first two national studies on PTSD prevalence (Schuster, et al., 2002; Galea, et al., 2002). The results found a prevalence rate of 5.9% for probable PTSD, matching identically previous national surveys. There were higher levels of PTSD and MDD for females, those with less education and who were single or unmarried, and those who had a prior history of mental health problems or psychological trauma. PTSD and MDD were associated with higher levels of alcohol and drug use since September 11. Relations to active duty military personnel appear to moderate the perception of threat, suggesting the importance of affiliative kinship patterns to coping with stress. Finally, the concept of geographic and psychological proximity to the 'zone of danger' is discussed.

Chen, H., H. Chung, et al. (2003). "The emotional distress in a community after the terrorist attack on the World Trade Center." Community Ment Health J 39(2): 157-65.

OBJECTIVES: To examine psychological impact of the September 11th disaster on the immediate neighborhood of the New York World Trade Center. **METHODS:** 555 residents from the local Chinatown community participated in the study. They were surveyed retrospectively on their emotional-distress immediately after the tragedy and five months later. **RESULTS:** Prevalent anxiety was found in general community residents and additional depression in those who lost family members or friends. The mental health condition of the community improved tremendously five months later, with the initial 59% of general residents having 4 or more emotional symptoms dropping to 17%. However, more than half of the community residents had persistently shown one or more symptoms of emotional distress. Those who had lost a family member or friend in the disaster showed significantly higher distress, with 90% of them had four or more major psychiatric symptoms during the first few weeks right after the disaster, and the rate dropped to 35% five months later. Overall, those in their 40s and 50s seemed to have had relatively higher emotional distress than both younger and older groups. **DISCUSSION:**

Methodological limitations were discussed concerning retrospective reporting and sample characteristics.

Creson, D. L., J. M. Schmitz, et al. (2003). Stress and behavior change in a substance-abusing population following September 11, 2001. Addictive Disorders & Their Treatment. **Vol 2(2)**: 59-61.

This article explores the emotional impact of the September 11, 2001, terrorist attacks on substance use and behavior changes within an outpatient substance abuse population in Houston, Texas. Thirty-five outpatients and 51 clinical staff members participated in a voluntary survey assessing current subjective distress regarding the September 11th terrorist attacks on the US. Two types of stress reactions, intrusive and avoidance experiences, as well as total stress level were evaluated. Additionally, substance use and other behavior changes were assessed. Outpatients had higher stress scores and increased use of tobacco products compared with clinic staff members. This study suggests that indirect exposure through media to potentially traumatic events can have consequences for substance abuse treatment programs and that treatment staff should be prepared to assist patients with effective coping strategies. (PsycINFO Database Record (c) 2003 APA, all rights reserved)

DeLisi, L. E., A. Maurizio, et al. (2003). "A survey of New Yorkers after the Sept. 11, 2001, terrorist attacks." American Journal of Psychiatry **Vol 160(4)**: 780-783.

This study examined the prevalence of psychiatric symptoms among residents/workers in Manhattan 3-6 months after the Sept. 11, 2001, terrorist attacks. A total of 1,009 adults (aged 18-85 yrs) were interviewed in person throughout Manhattan. All answered questions about themselves before and after September 11 that included their emotional status. A total of 56.3% had at least one severe or two or more mild to moderate symptoms. Women reported significantly more symptoms than men. Loss of employment, residence, or family/friends correlated with greater and more severe symptoms. The most distressing experiences appeared to be painful memories and reminders; dissociation was rare. Only 26.7% of individuals with severe symptoms were obtaining treatment. Over half of the individuals had some emotional sequelae 3-6 months after September 11, but the percent was decreasing. Only a small portion of those with severe responses was seeking treatment. (PsycINFO Database Record (c) 2003 APA, all rights reserved)

Ford, C. A., J. R. Udry, et al. (2003). "Reactions of young adults to September 11, 2001." Arch Pediatr Adolesc Med **157(6)**: 572-8.

BACKGROUND: Wave III of the National Longitudinal Study of Adolescent Health provides opportunities to describe the reactions of young adults to September 11, 2001, and to increase understanding of the reactions among those who do not directly witness disasters. **OBJECTIVES:** To compare the feelings, perceptions, and behaviors of respondents interviewed before with those of respondents interviewed within 9 weeks after September 11; and to test the influence of time and distance from terrorist sites on pre-post comparisons. **DESIGN:** Cross-sectional study, with comparison groups before and after September 11. **SETTING:** In-home interviews. **PARTICIPANTS:** Seven thousand ninety-five respondents aged 18 to 26 years. **MAIN OUTCOME MEASURES:** Sadness, psychological distress, closeness to parents, importance of religion and spirituality, trust in government, and substance use. **RESULTS:** Male

(adjusted odds ratio [aOR], 1.33; 95% confidence interval [CI], 1.08-1.65) and female (aOR, 1.44; 95% CI, 1.22-1.71) respondents interviewed after September 11 were more likely to report sadness and increased trust in government (aOR range, 2.11-3.30) than those interviewed before September 11. Proportions reporting sadness returned to baseline in 4 to 6 weeks; increased political trust persisted for the 9-week study period. Male respondents interviewed the second week afterwards were more likely to report religious faith (aOR, 2.06; 95% CI, 1.40-3.00) and spiritual life (aOR, 1.75; 95% CI, 1.18-2.60) as important than were those interviewed before the event. Female respondents interviewed afterwards were more likely to report higher levels of psychological distress (aOR, 1.40; 95% CI, 1.08-1.83) and closeness to fathers (aOR, 1.36; 95% CI, 1.08-1.72). There were no pre-post differences in substance use. Respondents closest to terrorist sites were most affected. **CONCLUSION:** Young adults who did not directly witness the events of September 11 experienced reactions that were multifaceted and transient--except for persisting trust in government.

Galea, S., D. Vlahov, et al. (2003). "Trends of probable post-traumatic stress disorder in New York City after the September 11 terrorist attacks." *Am J Epidemiol* **158**(6): 514-24.

The authors investigated trends in probable post-traumatic stress disorder (PTSD) prevalence in the general population of New York City in the first 6 months after the September 11 terrorist attacks. Three random digit dialing telephone surveys of adults in progressively larger portions of the New York City metropolitan area were conducted 1 month, 4 months, and 6 months after September 11, 2001. A total of 1,008, 2,001, and 2,752 demographically representative adults were recruited in the three surveys, respectively. The current prevalence of probable PTSD related to the September 11 attacks in Manhattan declined from 7.5% (95% confidence interval: 5.7, 9.3) 1 month after September 11 to 0.6% (95% confidence interval: 0.3, 0.9) 6 months after September 11. Although the prevalence of PTSD symptoms was consistently higher among persons who were more directly affected by the attacks, a substantial number of persons who were not directly affected by the attacks also met criteria for probable PTSD. These data suggest a rapid resolution of most of the probable PTSD symptoms in the general population of New York City in the first 6 months after the attacks. The psychological consequences of a large-scale disaster in a densely populated urban area may extend beyond persons directly affected by the disaster to persons in the general population.

Grieger, T. A., C. S. Fullerton, et al. (2003). "Posttraumatic Stress Disorder, Alcohol Use, and Perceived Safety After the Terrorist Attack on the Pentagon." *Psychiatric Services* **54**(10): 1380-1382.

OBJECTIVE: The authors examined posttraumatic stress disorder (PTSD), alcohol use, and perceptions of safety in a sample of survivors of the September 11, 2001, terrorist attack on the Pentagon. **METHODS:** Analyses were conducted to examine the effect of past traumatic experience, trauma exposure, initial emotional response, and peritraumatic dissociation on probable PTSD, substance use, and perceived safety among 77 survivors seven months after the attack. **RESULTS:** Eleven respondents (14 percent) had PTSD. Those with PTSD reported higher levels of initial emotional response and peritraumatic dissociation. Ten respondents (13 percent) reported increased use of alcohol. Women were more than five times as likely as men to have PTSD and almost seven times as likely to report increased use of alcohol. Persons with higher peritraumatic dissociation were more likely to develop PTSD and report increased alcohol

use. Those with lower perceived safety at seven months had higher initial emotional response and greater peritraumatic dissociation and were more likely to have PTSD, to have increased alcohol use, and to be female. CONCLUSIONS: The association of perceived safety with gender, the presence of PTSD, and increased alcohol use among survivors of the terrorist attack on the Pentagon warrants further study.

Hoven, C. W., C. S. Duarte, et al. (2003). "Children's mental health after disasters: the impact of the World Trade Center attack." Curr Psychiatry Rep 5(2): 101-7.

This paper summarizes the results of systematic studies published in peer-reviewed journals from 1999 to 2002 addressing post-traumatic stress reactions in children after mass disasters. Children's post-traumatic reactions are considered in five different contexts--natural disasters, large-scale human-induced accidents, spree shootings, war, and terrorism. Association of these reactions with gender and age, as well as longitudinal course, is addressed. Other post-traumatic reactions in children after a mass disaster, as well as the comorbidity of these with stress reactions, are reported. With this as background, the most relevant epidemiologic investigations conducted after the World Trade Center attacks are then described. It is expected that new knowledge in the area of children's post-traumatic reactions to disasters will result from the research initiatives launched after September 11, 2001.

Klitzman, S. and N. Freudenberg (2003). "Implications of the World Trade Center attack for the public health and health care infrastructures." Am J Public Health 93(3): 400-6.

The September 11, 2001, attack on the World Trade Center had profound effects on the well-being of New York City. The authors describe and assess the strengths and weaknesses of the city's response to the public health, environmental/ occupational health, and mental health dimensions of the attack in the first 6 months after the event. They also examine the impact on the city's health care and social service system. The authors suggest lessons that can inform the development of a post-September 11th agenda for strengthening urban health infrastructures.

Morgan, L., J. Scourfield, et al. (2003). "The Aberfan disaster: 33-year follow-up of survivors." Br J Psychiatry 182: 532-6.

BACKGROUND: Experiencing life-threatening events often contributes to the onset of such psychiatric conditions as post-traumatic stress disorder (PTSD). Children can develop PTSD; however, there is controversy over whether PTSD symptoms decrease or persist over time. AIMS: To examine the long-term effects of surviving the 1966 Aberfan disaster in childhood. METHOD: Survivors (n=41) were compared with controls (n=72) matched for age and background. All were interviewed using the Composite International Diagnostic Interview, measures of current health and social satisfaction, and the General Health Questionnaire. The survivor group also completed the Impact of Event Scale to assess current levels of PTSD. RESULTS: Nineteen (46%; 95% CI 31-61) survivors had had PTSD at some point since the disaster, compared with 12 (20%; 95% CI 10-30) controls (OR=3.38 (95% CI 1.40-8.47)). Of the survivors, 12 (29%; 95% CI 15-43) met diagnostic criteria for current PTSD. Survivors were not at a significantly increased risk of anxiety, depression or substance misuse. CONCLUSIONS: Trauma in childhood can lead to PTSD, and PTSD symptoms can persist for as long as 33 years into adult life. Rates of other psychopathological disorders are not necessarily raised after life-threatening childhood trauma.

Weissman, E. M., M. Kushner, et al. (2003). "Volume of VA patients with posttraumatic stress disorder in the New York metropolitan area after September 11." Psychiatr Serv **54**(12): 1641-3.

The authors examined data from the Veterans Integrated Service Network of New York and New Jersey to determine whether the number of veterans who were treated for posttraumatic stress disorder (PTSD) increased significantly after the terrorist attacks of September 11, 2001. They analyzed the number of veterans treated for PTSD at Veterans Healthcare Administration facilities in New York and New Jersey from September 1999 through June 2002. The number of veterans treated for PTSD in these facilities after September 11 exceeded projections based on secular trends, and the increase was more pronounced than for other diagnostic groups. The results highlight the need to ensure adequate availability of services in the wake of traumatic events.

Zywiak, W. H., R. L. Stout, et al. (2003). "Alcohol relapses associated with September 11, 2001: a case report." Subst Abus **24**(2): 123-8.

The timing of the terrible events of September 11, 2001 (9-11), and an ongoing randomized clinical trial of case monitoring have allowed a prospective examination of the effects of trauma upon the relapse rates of a group of clients following alcohol detoxification. The clients studied in this report were enrolled in case monitoring prior to 9-11. Case monitoring consists of telephone contacts on a tapering schedule designed to help clients avoid relapses, reduce the severity of relapses that do occur, and get clients back into treatment, at less intense levels, than would occur without case monitoring. For those clients completing a telephone contact before and a telephone contact after 9-11, none of the clients drank between detox discharge and 9-11, while 42% drank by the first telephone contact after 9-11. Data from another study were analyzed and results counter the rival hypothesis that the case monitoring study results reflect an annual seasonal effect. Results suggest that terrorist events may lead to a greater likelihood of relapse for those in alcohol recovery. These effects may be ameliorated by public education and outreach.

2002

(2002). "Community needs assessment of lower Manhattan residents following the World Trade Center attacks--Manhattan, New York City, 2001." MMWR Morb Mortal Wkly Rep **51**(Spec No): 10-3.

On September 11, 2001, terrorists attacked and destroyed the World Trade Center (WTC) in New York City (NYC). An estimated 2,819 persons were reported killed in the attacks; many others were injured (Office of the Chief Medical Examiner, New York City Department of Health and Mental Hygiene [NYCDOHMH], unpublished data, 2002). An estimated 25,000 persons living nearby in lower Manhattan were affected both physically and emotionally. Many persons witnessed the attacks; lost family and friends; were exposed to smoke, dust, and debris; and evacuated their homes. To identify the health-related needs and concerns of persons residing near the attack site, NYCDOHMH, in collaboration with CDC, surveyed persons residing in areas immediately surrounding the WTC site. The primary purpose of the survey was to gather information to set priorities and direct public health interventions. This report summarizes findings from the assessment, which indicate that a large proportion of respondents had physical

and psychological symptoms potentially associated with the exposure and needed information to address their health and safety concerns. On the basis of the results of the survey, NYCDOHMH responded to resident concerns, helped reduce exposure to dust and debris, and provided information about mental health resources.

(2002). "Impact of September 11 attacks on workers in the vicinity of the World Trade Center--New York City." MMWR Morb Mortal Wkly Rep **51**(Spec No): 8-10.

In January 2002, CDC's National Institute for Occupational Safety and Health received requests for Health Hazard Evaluations from labor unions representing workers employed in buildings in the vicinity of the World Trade Center (WTC). Workers reported persistent physical and mental health symptoms that they associated with exposures from the WTC collapse and ensuing fires. To address these concerns, CDC conducted surveys of workers at four workplaces in New York City (NYC), a high school (high school A) and college (college A) near the WTC site, and a high school (comparison high school B) and college (comparison college B) > or = 5 miles from the WTC site to determine rates of physical and mental health symptoms. This report summarizes the preliminary results of the employee surveys, which indicated that workers employed near the WTC site had significantly higher rates of physical and mental health symptoms than workers employed > or = 5 miles from the site. Intervention programs should be tailored to address the needs of these workers, and the effectiveness of these programs should be evaluated. Further assessment is warranted to describe the nature and extent of illness in specific working groups and individual medical follow-up in those with persistent symptoms.

(2002). "Psychological and emotional effects of the September 11 attacks on the World Trade Center--Connecticut, New Jersey, and New York, 2001." MMWR Morb Mortal Wkly Rep **51**(35): 784-6.

To measure the psychological and emotional effects of the September 11, 2001, terrorist attacks on the World Trade Center (WTC), Connecticut, New Jersey, and New York added a terrorism module to their ongoing Behavioral Risk Factor Surveillance System (BRFSS). This report summarizes the results of the survey, which suggest widespread psychological and emotional effects in all segments of the three states' populations. The findings underscore the importance of collaboration among public health professionals to address the physical and emotional needs of persons affected by the September 11 attacks.

Boscarino, J. A., S. Galea, et al. (2002). "Utilization of mental health services following the September 11th terrorist attacks in Manhattan, New York City." Int J Emerg Ment Health **4**(3): 143-55.

To assess mental health utilization in Manhattan following the September 11th terrorist attacks, a random-digit-dial telephone survey was conducted 5 to 8 weeks afterwards, among 988 randomly selected adult householders over 17 years old (females = 52%; whites = 72%; mean age = 42). 16.9% (95% confidence interval [CI] = 14.4-19.5) of residents reported using mental health services 30 days before the attacks and 19.4% (95% CI = 16.7-22.2) reported using these services 30 days afterwards (pre/post NcMemar's chi² = 8.0, df = 1, p = 0.005, odds ratio[OR] = 2.0). 10.0% (95% CI = 7.9-12.0) increased mental health utilization 30 days after the attacks, compared to 30 days before and 5.3% (95% CI = 3.7-6.9) decreased utilization. Risk factors associated with increased mental health utilization in multivariate analyses included: being 45-64

years of age (vs. 65+; OR = 8.3, $p = 0.011$) female gender (OR = 2.3, $p = 0.004$), experiencing 4+ lifetime traumatic events (vs. none; OR = 3.5, $p = 0.002$), experiencing 2+ stressful life events in the past 12 months (vs. none; OR = 3.3, $p < 0.001$), and experiencing an acute panic attack during the disaster (OR = 3.3, $p < 0.001$). Neither current post-traumatic stress disorder (PTSD) nor current depression was predictive of increased post-disaster utilization when panic attack was included in the multivariate analysis. While we did find a statistically significant increase in pre- vs. post-disaster utilization among the general population in Manhattan this increase was not substantial, except among specific subgroups, including those who had a perievent panic attack, among those exposed to previous stressors, among women, and among those less than 65 years old.

CASA, National Center on Addiction and Substance Abuse at Columbia University. (2002). Nearly Half the Nation Reports an Increased Demand for Drug and Alcohol Treatment Six Months After September 11. New York: 4 pp.

Reports on a telephone survey of offices of substance abuse services in 50 states, the ten largest U.S. cities, and Washington, DC.

Darden, M. L. (2002). "Wake of September 11th attacks: implications for research, policy and practice." *J Natl Med Assoc* **94**(2): A24, A27-9.

The National Consortium for African American Children (NCAAC) held a National Forum on Bioterrorism and Children on November 6, 2001 in Washington, DC. Convened in the wake of the September 11th attacks on New York City and the Pentagon, this unprecedented conference assembled a cross-section of professionals in child advocacy, health, mental health, insurance, economics, law enforcement, and media technology. The ensuing discussion focused on issues surrounding biological agents, their impact on children and youth, and the strategies needed to protect the health and mental health of children and families in the event of a large-scale bioterrorist crisis. Lessons learned as well as the implications of the terrorist acts from the tragic events of September 11th formed the backdrop for engaging dialogue among various industry executives and professionals. Accounts of personal experiences during the unprecedented tragedy of 9-11 were shared and provided a context for heightened preparedness planning for children and adults. A collaborative statement was also presented by NCAAC, the National Medical Association, the Association of Black Psychologists, and the National Black Media Coalition. This forum was hailed as a model for communities of color to join and help bolster broad-based coalition building to ensure the availability of culturally and linguistically appropriate messages, services, and support. As intended, the forum devoted significant attention to the special needs of children, their caregivers and families and provided for an invaluable interchange which is slated to evolve into a national action plan to address the imminent dangers facing our nation's children.

Deren, S., M. Shedlin, et al. (2002). "Impact of the September 11th attacks in New York City on drug users: a preliminary assessment." *J Urban Health* **79**(3): 409-12.

An exploratory assessment of the impact of the September 11th attacks in New York City on drug users, including their perceptions of changes in drug use, drug availability, police activities, and access to services, was undertaken. Methods included focus groups with drug users and acquired immunodeficiency syndrome (AIDS) outreach worker supervisors and

surveys of service providers. Results indicated that, while there was some immediate concern about the potential impact on drug availability, there was no perceived scarcity, although some drug users did report a decrease in drug purity. Responses included increased use of drugs and increased demand for drug treatment. The wide range of responses indicates that continued monitoring of the impact may be needed to assess long-term effects.

Factor, S. H., Y. Wu, et al. (2002). "Drug use frequency among street-recruited heroin and cocaine users in Harlem and the Bronx before and after September 11, 2001." J Urban Health **79**(3): 404-8.

We determined if illicit drug use frequency changes after a disaster by comparing drug use frequency in two street-recruited samples of heroin and cocaine users, ages 15-40 years. The users were interviewed between July 11 and November 11 and divided into before- and after-September 11th groups for analysis. The before and after groups were similar in the mean number of days of drug use per month (sniff cocaine 6.8 days vs. 9.4 days, respectively, $P = .17$; snorted heroin 13.9 vs. 14.0, respectively, $P = .96$; smoked crack 16.9 vs. 15.6, respectively, $P = .96$; and smoked marijuana 17.5 vs. 15.3, respectively, $P = .36$) and in the proportion of daily users: sniffed cocaine 10% versus 17%, respectively ($P = .28$); snorted heroin 47% versus 40%, respectively ($P = .91$); smoked crack 33% versus 37%, respectively ($P = .68$); and smoked marijuana 47% versus 40%, respectively ($P = .41$). Among street-recruited heroin and cocaine users in Harlem and the Bronx, the frequency of drug use did not increase following the events of September 11, 2001.

Galea, S., J. Ahern, et al. (2002). "Psychological sequelae of the September 11 terrorist attacks in New York City." N Engl J Med **346**(13): 982-7.

BACKGROUND: The scope of the terrorist attacks of September 11, 2001, was unprecedented in the United States. We assessed the prevalence and correlates of acute post-traumatic stress disorder (PTSD) and depression among residents of Manhattan five to eight weeks after the attacks. **METHODS:** We used random-digit dialing to contact a representative sample of adults living south of 110th Street in Manhattan. Participants were asked about demographic characteristics, exposure to the events of September 11, and psychological symptoms after the attacks. **RESULTS:** Among 1008 adults interviewed, 7.5 percent reported symptoms consistent with a diagnosis of current PTSD related to the attacks, and 9.7 percent reported symptoms consistent with current depression (with "current" defined as occurring within the previous 30 days). Among respondents who lived south of Canal Street (i.e., near the World Trade Center), the prevalence of PTSD was 20.0 percent. Predictors of PTSD in a multivariate model were Hispanic ethnicity, two or more prior stressors, a panic attack during or shortly after the events, residence south of Canal Street, and loss of possessions due to the events. Predictors of depression were Hispanic ethnicity, two or more prior stressors, a panic attack, a low level of social support, the death of a friend or relative during the attacks, and loss of a job due to the attacks. **CONCLUSIONS:** There was a substantial burden of acute PTSD and depression in Manhattan after the September 11 attacks. Experiences involving exposure to the attacks were predictors of current PTSD, and losses as a result of the events were predictors of current depression. In the aftermath of terrorist attacks, there may be substantial psychological morbidity in the population.

Galea, S., H. Resnick, et al. (2002). "Posttraumatic stress disorder in Manhattan, New York City, after the September 11th terrorist attacks." J Urban Health **79**(3): 340-53.

Estimates of acute mental health symptoms in the general population after disasters are scarce. We assessed the prevalence and correlates of acute posttraumatic stress disorder (PTSD) in residents of Manhattan 5-8 weeks after the terrorist attacks of September 11, 2001. We used random-digit dialing to contact a representative sample of adults living in Manhattan below 110th Street. Participants were interviewed about prior life events, personal characteristics, exposure to the events of September 11th, and psychological symptoms after the attack. Among 988 eligible adults, 19.3% reported symptoms consistent with PTSD at some point in their life, and 8.8% reported symptoms consistent with a diagnosis of current (within the past 30 days) PTSD. Overall, 57.8% of respondents reported at least one PTSD symptom in the past month. The most common past-month symptoms were intrusive memories (27.4%) and insomnia (24.5%). Predictors of current PTSD in a multivariable model were residence below Canal Street, low social support, life stressors 12 months prior to September 11th, perievent panic attack, losing possessions in the attacks, and involvement in the rescue efforts. These findings can help guide resource planning for future disasters in densely populated urban areas.

Gidron, Y. (2002). "Posttraumatic stress disorder after terrorist attacks: a review." J Nerv Ment Dis **190**(2): 118-21.

Henzlova, M. J. (2002). "Psychiatric consequences of September 11." JAMA **288**(21): 2683.

Letter to the editor: Henzlova raises the issue of potential sampling bias following events that involve substantial infrastructure damage....

Herman, D., C. Felton, et al. (2002). "Mental health needs in New York state following the September 11th attacks." J Urban Health **79**(3): 322-31.

In October 2001, the New York State Office of Mental Health and the Department of Epidemiology of the Mailman School of Public Health of Columbia University conducted a rapid assessment of the nature and magnitude of mental health needs in the state resulting from the September 11th terrorist attacks on the World Trade Center. This effort was carried out during a period of great turmoil and uncertainty as New Yorkers responded to the shocking events of this unprecedented disaster. Using the limited data available at the time, we estimated that over 520,000 persons in New York City and the surrounding counties would experience posttraumatic stress disorder resulting from exposure to the attacks, and that more than 129,000 would seek treatment for this disorder during 2002. This assessment is part of an ongoing collaborative process between public and academic partners; the effort is designed to strengthen the capacity of the mental health system to respond to current and future terrorism. Estimates from this initial assessment will be refined over time as further data concerning the impact of the September 11th attacks become available.

Hoge, C. W., C. C. Engel, et al. (2002). "Development of a brief questionnaire to measure mental health outcomes among Pentagon employees following the September 11, 2001 attack." Mil Med **167**(9 Suppl): 60-3.

In the aftermath of the terrorist action at the Pentagon there was a critical operational need to understand and document the extent of injuries, illnesses, and exposures sustained by

Service members and civilian employees at the Pentagon. It was decided to develop and administer a brief questionnaire to the Pentagon employees that would contain questions about exposures, new or worsening injuries or illnesses, mental health, and factors suggested by the literature to increase risk or be protective for these outcomes. This report describes the development the mental health portion of this questionnaire. Most mental health instruments are very lengthy, limiting their usefulness as rapid public health assessment tools. This brief instrument was designed to cover four main symptom domains, as well as key risk/protective factors, thought to be most important following the terrorist attack. The symptom domains were: acute and post-traumatic stress symptoms, depression, anxiety/panic attacks, and alcohol abuse. Further analyses will assess the usefulness of this questionnaire as a public health tool for rapid assessment of mental health symptoms following the attack.

Hoge, C. W., J. A. Pavlin, et al. (2002). "Psychological sequelae of September 11." New England Journal of Medicine **Vol 347(6)**: 443-444.

Studies of health care use after the September 11 terrorist attacks would complement prior research on the subject. The authors used the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) data base to conduct behavioral health surveillance among military health system beneficiaries in the Washington, D.C., area after the September 11 attack on the Pentagon. Diagnostic groups for depression, anxiety, acute and posttraumatic stress disorders, substance-use disorders, and other behavioral health problems were defined according to the ICD-9. Although there was no significant increase in the total number of visits to behavioral health clinics, there were significant increases in the number of visits for anxiety disorder and acute stress reactions in children and for adjustment reactions in adults. Comments by G. Langer and a reply by S. Galea et al are included. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Johnson, P. B., L. Richter, et al. (2002). "Alcohol use patterns before and after September 11th." American Clinical Laboratory **21(7)**: 25-7.

Kettl, P. and E. Bixler (2002). "Changes in psychotropic drug use after September 11, 2001." Psychiatric Services **53(11)**: 1475-6.

The September 11, 2001, terrorist attacks were unprecedented in scope, and Americans viewed them over and over again on television. In this study we sought to determine whether the American public suffered symptoms of stress that led to an increase in prescription psychotropic drug use in the weeks after the attacks.

We obtained pharmaceutical data from PDC Health, a health care organization that monitors use of pharmaceuticals throughout the country. Information on prescriptions of benzodiazepines, antidepressants, and antipsychotics for our home state of Pennsylvania and for the country as a whole were obtained for the six-month period before September 11 and for the seven-week period after the attacks. Chi square analysis was used to determine the significance of differences between the two periods.

Langer, G. (2002). "Psychological sequelae of September 11." N Engl J Med **347(6)**: 443-5.

To the Editor: Studies of health care use after the September 11 terrorist attacks would complement surveys such as the one by Galea et al. (March 28 issue).¹ We used the Electronic

Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) data base to conduct behavioral health surveillance among military health system beneficiaries in the Washington, D.C., area after the September 11 attack on the Pentagon. This data base includes the electronic records of all outpatient health care visits at military treatment facilities.²

Levav, I. and A. Ponizovsky (2002). "Psychiatric consequences of September 11." JAMA **288**(21): 2683.

Letter to the editor

Marshall, R. D., S. Galea, et al. (2002). "Psychiatric consequences of September 11." JAMA **288**(21): 2683-4.

Letter to the editor

McCarter, L. and W. Goldman (2002). "Use of psychotropics in two employee groups directly affected by the events of September 11." Psychiatr Serv **53**(11): 1366-8.

The terrorist attacks of September 11, 2001, perhaps more than any preceding event, most immediately and directly affected the employed population. By September 12, employers rushed to provide mental health care to their employees. Emergency help was provided to current employees and their dependents and was even made available to the general public free of charge (1). Since September 11, early anecdotes of increased need for mental health care have been supported by empirical observations. Schuster and colleagues (2) reported that 90 percent of the 560 people they surveyed had at least one symptom of stress associated with the incident. New prescriptions for antianxiety drugs had increased by 25 percent nationwide in October 2001 (3). The events of September 11 clearly had immediate and dramatic effects on the mental health needs of individuals, and these immediate needs were often met with a short-term increase in a specific form of mental health emergency services—critical incident stress debriefings, provided mostly by managed behavioral health organizations (1).

Despite these immediate responses, recent reports suggest that many signs of distress persist (4). Although there is evidence of enduring distress and dysfunction, an increase in the use of mental health specialty services is not readily apparent (1). Perhaps people who need longer-term follow-up care, even those who are employed, are not seeking appropriate services. For example, Rosenheck (5) found no substantial change in the use of outpatient services after September 11 among patients in Department of Veterans Affairs facilities in New York and concluded that the event was not as medically significant as had been anticipated.

This study, from one managed behavioral health organization—United Behavioral Health (UBH)—examined the use of psychopharmaceuticals over the longer term in two employed populations. To the extent that an employed population would be expected to have fewer barriers to care than an unemployed population, we expected that the use of psychopharmaceuticals would increase with need. We focused on the use of pharmaceuticals because previous studies showed a short-term increase in their use after September 11 (3) and because of the substantial role of pharmaceuticals in the treatment of the most common expected problems—anxiety and mood disorders.

ONDCP, Office of National Drug Control Policy. (2002). Pulse Check: Trends in Drug Abuse (Special Topic: The Impact of September 11): 76 pp.

Based on interviews at 20 Pulse Check sites, provides data availability, trafficking routes and modes, marketing strategies and use patterns for heroin, crack, powder cocaine, marijuana, methamphetamine, diverted OxyContin, benzodiazapines, and alcohol.

Pfefferbaum, B., S. S. Vinekar, et al. (2002). "The effect of loss and trauma on substance use behavior in individuals seeking support services after the 1995 Oklahoma City bombing." Annals of Clinical Psychiatry **Vol 14(2)**: 89-95.

Examined the effect of trauma exposure on substance use behaviors, specifically tobacco and alcohol use, in a group of 84 individuals (aged 21-84 yrs) who sought supportive services after the 1995 Oklahoma City bombing. A self-report instrument was used to assess demographics, sensory exposure, injury, interpersonal exposure through relationship with victims, peritraumatic reaction, grief, posttraumatic stress, worry about safety, functional impairment, and changes in smoking and drinking. Those who reported increased smoking had higher scores on peritraumatic reaction, grief, posttraumatic stress, worry about safety, and trouble functioning. Those who reported increased alcohol intake had higher scores on injury, peritraumatic reaction, grief, posttraumatic stress, worry about safety, and trouble functioning. Sensory exposure and interpersonal exposure were not significantly different between those with and without increased smoking or drinking. Although no causal relationship can be assumed, our findings indicate an association of grief and posttraumatic stress with increased substance use behaviors in disaster victims. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Rosenheck, R. (2002). "Reactions to the events of September 11." N Engl J Med **346(8)**: 629-30.

Schuster et al. (Nov. 15 issue) report an increased incidence of distress after the events of September 11 and advise clinicians to be prepared to assist people with trauma-related symptoms. Using national workload data from the Department of Veterans Affairs, I compared the average number of daily outpatient visits during the 19 working days before and after September 11 in different clinical subgroups and geographic locations (excluding weekends, holidays, and September 11 itself).

SAMHSA, Substance Abuse and Mental Health Services Administration. (2002). Impact of September 11, 2001 Events on Substance Use and Mental Health. Rockville, MD: 124 pp.

Examines effects of September 11th on substance use and substance abuse treatment, mental health problems and treatment, and religiosity in the New York area using data from the 2000 and 2001 National Household Surveys on Drug Abuse.

Schlenger, W. E., J. M. Caddell, et al. (2002). "Psychological reactions to terrorist attacks: findings from the National Study of Americans' Reactions to September 11." JAMA **288(5)**: 581-8.

CONTEXT: The terrorist attacks of September 11, 2001, represent an unprecedented exposure to trauma in the United States. OBJECTIVES: To assess psychological symptom levels in the United States following the events of September 11 and to examine the association between postattack symptoms and a variety of indices of exposure to the events. DESIGN: Web-based epidemiological survey of a nationally representative cross-sectional sample using the Posttraumatic Stress Disorder (PTSD) Checklist and the Brief Symptom Inventory, administered 1 to 2 months following the attacks. SETTING AND PARTICIPANTS: Sample of 2273 adults,

including oversamples of the New York, NY, and Washington, DC, metropolitan areas. **MAIN OUTCOME MEASURES:** Self-reports of the symptoms of PTSD and of clinically significant nonspecific psychological distress; adult reports of symptoms of distress among children living in their households. **RESULTS:** The prevalence of probable PTSD was significantly higher in the New York City metropolitan area (11.2%) than in Washington, DC (2.7%), other major metropolitan areas (3.6%), and the rest of the country (4.0%). A broader measure of clinically significant psychological distress suggests that overall distress levels across the country, however, were within expected ranges for a general community sample. In multivariate models, sex, age, direct exposure to the attacks, and the amount of time spent viewing TV coverage of the attacks on September 11 and the few days afterward were associated with PTSD symptom levels; sex, the number of hours of television coverage viewed, and an index of the content of that coverage were associated with the broader distress measure. More than 60% of adults in New York City households with children reported that 1 or more children were upset by the attacks. **CONCLUSIONS:** One to 2 months following the events of September 11, probable PTSD was associated with direct exposure to the terrorist attacks among adults, and the prevalence in the New York City metropolitan area was substantially higher than elsewhere in the country. However, overall distress levels in the country were within normal ranges. Further research should document the course of symptoms and recovery among adults following exposure to the events of September 11 and further specify the types and severity of distress in children.

Silver, R. C., E. A. Holman, et al. (2002). "Nationwide longitudinal study of psychological responses to September 11." *JAMA* **288**(10): 1235-44.

CONTEXT: The September 11, 2001, attacks against the United States provide a unique opportunity to examine longitudinally the process of adjustment to a traumatic event on a national scale. **OBJECTIVE:** To examine the degree to which demographic factors, mental and physical health history, lifetime exposure to stressful events, September 11-related experiences, and coping strategies used shortly after the attacks predict psychological outcomes over time. **DESIGN, SETTING, AND PARTICIPANTS:** A national probability sample of 3496 adults received a Web-based survey; 2729 individuals (78% participation rate) completed it between 9 and 23 days (75% within 9 to 14 days) after the terrorist attacks. A random sample of 1069 panelists residing outside New York, NY, were drawn from the wave 1 sample (n = 2729) and received a second survey; 933 (87% participation rate) completed it approximately 2 months following the attacks. A third survey (n = 787) was completed approximately 6 months after the attacks. **MAIN OUTCOME MEASURES:** September 11-related symptoms of acute stress, posttraumatic stress, and global distress. **RESULTS:** Seventeen percent of the US population outside of New York City reported symptoms of September 11-related posttraumatic stress 2 months after the attacks; 5.8% did so at 6 months. High levels of posttraumatic stress symptoms were associated with female sex (odds ratio [OR], 1.64; 95% confidence interval [CI], 1.17-2.31), marital separation (OR, 2.55; 95% CI, 1.06-6.14), pre-September 11 physician-diagnosed depression or anxiety disorder (OR, 1.84; 95% CI, 1.33-2.56) or physical illness (OR, 0.93; 95% CI, 0.88-0.99), severity of exposure to the attacks (OR, 1.31; 95% CI, 1.11-1.55), and early disengagement from coping efforts (e.g., giving up: OR, 1.68; 95% CI, 1.27-2.20; denial: OR, 1.33; 95% CI, 1.07-1.64; and self-distraction: OR, 1.31; 95% CI, 1.07-1.59). In addition to demographic and pre-September 11 health variables, global distress was associated with severity

of loss due to the attacks ($\beta = .07$; $P = .008$) and early coping strategies (e.g., increased with denial: $\beta = .08$; $P = .005$; and giving up: $\beta = .05$; $P = .04$; and decreased with active coping: $\beta = -.08$; $P = .002$). CONCLUSIONS: The psychological effects of a major national trauma are not limited to those who experience it directly, and the degree of response is not predicted simply by objective measures of exposure to or loss from the trauma. Instead, use of specific coping strategies shortly after an event is associated with symptoms over time. In particular, disengaging from coping efforts can signal the likelihood of psychological difficulties up to 6 months after a trauma.

Sullivan, P. A., P. J. Shapiro, et al. (2002). "Psychiatric consequences of September 11." JAMA **288**(21): 2684.

Letter to the editor

Vlahov, D., S. Galea, et al. (2002). "New York City, 2001: reaction and response." J Urban Health **79**(1): 2-5.

Editorial/commentary

Vlahov, D., S. Galea, et al. (2002). "Increased use of cigarettes, alcohol, and marijuana among Manhattan, New York, residents after the September 11th terrorist attacks." Am J Epidemiol **155**(11): 988-96.

The September 11, 2001, terrorist attacks were the largest human-made disaster in the United States since the Civil War. Studies after earlier disasters have reported rates of psychological disorders in the acute postdisaster period. However, data on postdisaster increases in substance use are sparse. A random digit dial telephone survey was conducted to estimate the prevalence of increased cigarette smoking, alcohol consumption, and marijuana use among residents of Manhattan, New York City, 5-8 weeks after the attacks. Among 988 persons included, 28.8% reported an increase in use of any of these three substances, 9.7% reported an increase in smoking, 24.6% reported an increase in alcohol consumption, and 3.2% reported an increase in marijuana use. Persons who increased smoking of cigarettes and marijuana were more likely to experience posttraumatic stress disorder than were those who did not (24.2% vs. 5.6% posttraumatic stress disorder for cigarettes; 36.0% vs. 6.6% for marijuana). Depression was more common among those who increased than for those who did not increase cigarette smoking (22.1 vs. 8.2%), alcohol consumption (15.5 vs. 8.3%), and marijuana smoking (22.3 vs. 9.4%). The results of this study suggest a substantial increase in substance use in the acute postdisaster period after the September 11th attacks. Increase in use of different substances may be associated with the presence of different comorbid psychiatric conditions.

Weiss, L., A. Fabri, et al. (2002). "A vulnerable population in a time of crisis: drug users and the attacks on the World Trade Center." J Urban Health **79**(3): 392-403.

In this article, we present preliminary findings from a qualitative study focused on the impact of the World Trade Center attacks on New York City residents who are current or former users of heroin, crack, and other forms of cocaine. In it, we present data describing their responses to and feelings about the attacks, changes in drug use after the attacks, and factors affecting changes in use. Our analysis is based on 57 open-ended interviews conducted between October 2001 and February 2002. The majority of study participants reported that the attacks had

a significant emotional impact on them, causing anxiety, sadness, and anger. Several described practical impacts as well, including significant reductions in income. On September 11th and the weeks and months that followed, several participants who had been actively using did increase their use of heroin, crack, and/or other forms of cocaine. Reductions in use were, however, as common over time as were increases. There was some relapse among former users, but this was limited to those who had stopped using drugs within the 6 months immediately preceding the attacks. A diverse set of factors interacted to control use. For some participants, these factors were internal, relating to their individual motivations and drug use experiences. Other participants were essentially forced to limit use by marked reductions in income. For others, access to health and social service professionals, as well as drug treatment, proved to be key.

Wilson, N., E. Hodgen, et al. (2002). "Events of 11 September 2001 significantly reduced calls to the New Zealand Quitline." Tob Control **11**(3): 280.

New Zealand has a national (free) telephone Quitline service that is promoted through regular mass media campaigns. Data are routinely collected on the over 100 callers per day. We used this data source to investigate the impact of the 11 September 2001 terrorist attacks in the USA on calls to this service. On Wednesday 12 September (11 September in New York was 12 September in New Zealand) there was a sudden decline in the number of new callers to the Quitline (only 137 callers relative to 237 on the previous day—a 42% reduction). Similarly, relative to the preceding Wednesday, the number of new callers was down by 41%.

Wunsch-Hitzig, R., J. Plapinger, et al. (2002). "Calls for help after September 11: a community mental health hot line." J Urban Health **79**(3): 417-28.

Although unprepared for a disaster of the magnitude of September 11th, New York City's mental health system responded immediately. Within weeks, Project Liberty, a recovery program funded by the Federal Emergency Management Agency (FEMA), was in operation. The program provides free education, outreach, and crisis counseling services for those affected by the disaster and its aftermath. LifeNet, a 24-hour, 7-day-a-week mental health information and referral hotline, is a key component of Project Liberty. In this article, we describe the operation of LifeNet and examine the volume of calls to the hotline during the 6 months following the terrorist attacks on the World Trade Center. We describe the demographics of the callers and the kinds of disaster-related mental health problems that callers presented. The data indicate a clear pattern of increasing calls from October through March for all demographic subgroups except seniors. Callers complaining of symptoms of posttraumatic stress and symptoms of anxiety, panic, and phobia increased over time. Bereavement-related calls increased as well. The number of callers who reported symptoms of depression and substance abuse/dependence did not show as clear-cut an increase over time. We looked at the volume of LifeNet calls in relation to the Project Liberty media campaign and suggest that the campaign has had a positive effect on call volume and that its impact is likely to continue over time.

2001

CASA, National Center on Addiction and Substance Abuse at Columbia University.. (2001). 13 States, Four Major Cities See Increased Demand for Drug and Alcohol Treatment Since September 11th. New York: 3pp.

Reports on a telephone survey of offices of substance abuse services in 41 states, 8 large cities, and Washington, DC.

Pfefferbaum, B. and D. E. Doughty (2001). "Increased alcohol use in a treatment sample of Oklahoma City bombing victims." Psychiatry: Interpersonal & Biological Processes Vol 64(4): 296-303.

Research examining alcohol use in disaster victims has yielded conflicting results. This study of 43 acknowledged alcohol users, taken from a nonrandom volunteer sample of Oklahoma City bombing victims receiving support services, revealed relationships between increased alcohol use and a number of variables--injury, retrospectively reported initial reaction to the explosion, grief, and posttraumatic stress symptomatology. The findings suggest that if alcohol use was motivated by an attempt to alleviate symptoms, it was not effective, as evidenced by an association between increased alcohol use and functional impairment. Increased alcohol consumption may present a problem in disaster victims months after exposure to trauma. Therefore, the use of alcohol should be routinely assessed in those who remain symptomatic over time. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Schuster, M. A., B. D. Stein, et al. (2001). "A national survey of stress reactions after the September 11, 2001, terrorist attacks." N Engl J Med 345(20): 1507-12.

BACKGROUND: People who are not present at a traumatic event may also experience stress reactions. We assessed the immediate mental health effects of the terrorist attacks on September 11, 2001. METHODS: Using random-digit dialing three to five days after September 11, we interviewed a nationally representative sample of 569 U.S. adults about their reactions to the terrorist attacks and their perceptions of their children's reactions. RESULTS: Forty-four percent of the adults reported one or more substantial stress symptoms; 91 percent had one or more symptoms to at least some degree. Respondents throughout the country reported stress syndromes. They coped by talking with others (98 percent), turning to religion (90 percent), participating in group activities (60 percent), and making donations (36 percent). Eighty-five percent of parents reported that they or other adults in the household had talked to their children about the attacks for an hour or more; 34 percent restricted their children's television viewing. Thirty-five percent of children had one or more stress symptoms, and 47 percent were worried about their own safety or the safety of loved ones. CONCLUSIONS: After the September 11 terrorist attacks, Americans across the country, including children, had substantial symptoms of stress. Even clinicians who practice in regions that are far from the recent attacks should be prepared to assist people with trauma-related symptoms of stress.